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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,017	10/27/2003	Yih-Cherng Juang	JCLA7776-D	4263

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EXAMINER	
ROSE, KIESHA L	
ART UNIT	**PAPER NUMBER**
2822	

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/695,017	JUANG, YIH-CHERNG	
	Examiner	Art Unit	
	Kiesha L. Rose	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-12 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the filing of the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,5 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurokawa et al.(U.S. Patent 6,054,975).

Kurokawa discloses a tape carrier package (Fig. 5) that contains a rectangular chip (301) having an active surface, wherein a plurality of bump electrodes (304) are centrally arranged in two rows on an active surface, a tape carrier comprising a device hole having an area smaller that the chip, a plurality of leads (302) each being divided into inner leads and outer leads wherein the inner leads are routed inward the center of the device hole and connected to the bump electrodes, a sealing material (308) encapsulating the active surface of the chip and the inner leads where the outer leads are exposed and a clearance between the active surface and the tape carrier such that the sealing material flows out and cover the whole surface of the chip during sealing and where the length of the device hole is substantially equal to that of the chip and the width of the device hole is smaller than the chip. (Figs. 14 and 24)

Claims 1,5-7 and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Tijima et al. (U.S. Patent 5,726,491).

Tijima discloses a tape carrier package (Figs. 1,6,7 and 9) that contains a rectangular chip (1) having an active surface, wherein a plurality of bump electrodes (5) are centrally arranged in two rows on an active surface, a tape carrier comprising a device hole having an area smaller that the chip, a plurality of leads (4) each being divided into inner leads and outer leads wherein the inner leads are routed inward the center of the device hole and connected to the bump electrodes, two test bumps (22) located at the end of the two rows of the bump electrodes, a polysilicon test circuit (21) around the edge of the chip active surface wherein the ends of the test circuit are electrically connected to the test bumps and the two of the leads are connected to the test bumps and the circuit is tested by applying a current to the test circuit, a sealing material (6) encapsulating the active surface of the chip and the inner leads where the outer leads are exposed and a clearance between the active surface and the tape carrier such that the sealing material flows out and cover the whole surface of the chip during sealing and where the length of the device hole is substantially equal to that of the chip and the width of the device hole is smaller than the chip. (Fig. 1)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurokawa.

Kurokawa discloses all the limitations except for the distance between the device hole and bumps, the formation of the bumps, the connection between the leads and bump electrodes, the clearance value and current supply. In regards to claims 2 and 12, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the distance between the edge of the device hole and the bump electrodes to be 280 microns and the clearance to be 10-60 microns, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch 617 F.2d 272, 205 USPQ 215 (1980)

In regards to claims 3-4 dealing with the formation of the bumps and the connection between the leads and bump electrodes, a *"product by process"* claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972): *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); In re Fessmann, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a *"product by, all of"* claim, and not the patentability of the process, and that an old or obvious product, whether claimed in *"product by process"* claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear. Even though product –by [-] process claims are limited by and defined by the process, determination of patentability is based upon

the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted)."

Claims 2-4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tajima.

Tajima discloses all the limitations except for the distance between the device hole and bumps, the formation of the bumps, the connection between the leads and bump electrodes, the clearance value and current supply. In regards to claims 2 and 12, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the distance between the edge of the device hole and the bump electrodes to be 280 microns and the clearance to be 10-60 microns, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch 617 F.2d 272, 205 USPQ 215 (1980)
In regards to claims 3-4 dealing with the formation of the bumps and the connection between the leads and bump electrodes, a *"product by process"* claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972): *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); In re Fessmann, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a *"product by, all of"* claim, and not the

patentability of the process, and that an old or obvious product, whether claimed in *"product by process"* claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear. Even though product –by [-] process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted)."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiesha L. Rose whose telephone number is 571-272-1844. The examiner can normally be reached on M-F 8:30-6:00 off 2nd Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLR

AMIR ZARABIAN
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